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June 23, 2008

Susan M. Hudson, Clerk
Vermont Public Service Board
112 State Street
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Re: **Reply Comments of the Department to CLF and VPIRG memo of June 6, 2008 on EEU Budget Recommendations**

Dear Mrs. Hudson:

As reflected in the comments of June 6, 2008, CLF and VPIRG recommend a significant increase in the budget for Vermont's Energy Efficiency Utility (EEU) and assert that it is required by Vermont law.[1] The Department responds in turn to the issues raised by CLF and VPIRG after providing a high level summary of its overall position.

Overall, the Departments continues to recommend that the Board maintain roughly level funding over the coming three-year cycle consistent with our filings of April 4 and 18 of 2008. The Department's recommendation coming at this time is, and should be, viewed as a resounding vote of support to continued robust spending for investments in Energy Efficiency consistent with statutory requirements and commitments. The Board should recognize that this recommendation takes place during a period of product and program transition. The largest category of efficiency (as reflected by savings levels) is being transformed. Federal appliance efficiency standards appear poised to erode the economic case

[1] Specifically, CLF and VPIRG recommend that the budget beginning in 2009 be increased to $52.5 million and that over the next three year period the budget should increase to approximately $85 million. Included among the references to justify this level of expenditure is the 2002-03 Optimal Energy study that they assert justifies expenditures many times current investment and the 2006 DPS Potential study that they assert justifies an increase of 60% without retrofit. The DPS disagrees with VPIRG and CLF characterization of the conclusions concerning the GDS report. The Optimal study predates the current understanding of baselines, costs, and technologies. It also predates the substantial energy efficiency program investment that was actually achieved in Vermont by the EEU between 2003 and 2008, and reflects incentive levels of 100% of incremental costs. As GDS and the Department have noted in its earlier 2006 deliberation on budgets, such incentive levels are simply inappropriate for market opportunity programs. See, GDS 2006 Potential Study at 3-4.

for continued investments in key appliance and end use categories.[2] As the Board is aware, Vermont has more than doubled its annual program investments over four years and makes more investment in efficiency programs on a per capita basis than any other jurisdiction by a considerable margin.[3] Indeed, the Department is now projecting actual declines in electricity demand over the coming 10 years.[4]

The Department's commitment to energy efficiency investments is also taking place in the form of our participation and leadership with the restructuring of the Efficiency Utility, the Department's role in fostering a role for energy efficiency in all-fuels, the Department's continued support for the role of energy efficiency in serving as alternatives to transmission projects at the Vermont System Planning Committee, the Department's support of the Green Mountain Efficiency Fund, and the Department's role in attempting to foster meaningful solutions to the challenges presented to us with fossil fuels for the coming heating season. The Department's support for energy efficiency is also reflected in the many policy paths and avenues presented in Section V of its Draft Comprehensive Energy Plan.[5]

I. Basis for DPS Position

The Department makes it recommendations on the budget based on the following factors and considerations:

First, the Department sponsored a comprehensive analysis of the efficiency potential in 2006 and supplemented that analysis with additional information from GDS in March and April of this year. As we indicated in our April 4 filings, the GDS study represents the only comprehensive and independent analysis of efficiency potential for Vermont. We supplemented the 2006 analysis with further guidance from GDS and conclude that the facts support funding levels consistent with existing budgetary commitments. The other studies and analysis referenced by CLF and VPIRG are either dated or represent simplified extrapolations for purposes of representing possible scenarios.

The 2006 GDS analysis, bolstered by the 2008 updates of GDS on the efficiency budgets and potential, provide the most relevant foundation for establishing the budget.[6] That report shows that at the then-

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[2] In addition to lighting standards, the new federal law includes cloth's washers, refrigerators and freezers, dehumidifiers, and dishwashers. http://thomas.loc.gov/cgi-bin/query/F?c110:8:./temp/~c110iHPzm4:e228102:

[3] This was true in even in 2004 before the Vermont budgets doubled. See, GDS Electric Efficiency Potential 2007, at 16.

[4] While the Department is projecting declines in kWh (energy) demand, the persistent increase in air conditioning load continues to suggest that summer peaks are likely to increase, resulting in a declining load factor. Vermont has already experienced a slight decline in electric energy demand between 2005 and 2007.

[5] http://www.publicservice.vt.gov/planning/CEP%20%20WEB%20DRAFT%20FINAL%206-4-08.pdf

[6] The GDS analysis is available at the Department's web site at the following address. http://www.publicservice.vt.gov/pub/other-pubs.html

current avoided costs, the level of technically feasible, cost-effective, achievable potential is approximately $34 to $35 million over the 2009-2011 timeframe, or roughly $26 to $27 million after removal of fuel switching programs that the Department argues should not be pursued as a matter of general programmatic approach. Since that time, the economics are even less favorable to fuel switching.

Second, the delivery of compact fluorescent (CFL) bulbs under the Residential Efficient Product program is a major part of the success of existing program activities and successes.[7] In 2007, CFLs accounted for over half of EVT's program savings and appear poised to represent more than 2/3rds in 2008. As the Board is aware, significant changes in the market for compact fluorescents will have a significant impact on available potential and the associated budgets necessary to acquire the efficiency resource.

The market for CFLs is undergoing significant, and perhaps even, dramatic transformation. In meeting one of the main objectives of having statewide programs, EVT's programs have certainly contributed to this market transformation – however the extent of the program's influence is uncertain. As such, CFLs are currently the subject of focused review by the Department and EVT to determine the actual sales in Vermont and the extent of EVT's impact in facilitating these sales. While the Department currently has little information about out-of-program purchases, it is clear from casual observation that the availability of CFLs is now pervasive; market changes are evidenced by the significant increases in CFL purchases through the program. In 2007, less then 600 thousand bulbs were purchased through EVT's efficient products program. In the first 5 months of 2008, more than 400 thousand have been purchased through the program. The Department expects program sales in 2008 to more than double prior year program sales. The impacts of this transformation substantially impact key technical assumptions that form the basis for economic estimates of program savings. As the market transforms, free ridership levels rise and the economics favoring future investment in CFLs decline. As markets transform, so do the expected life of savings claims decline. As the federal lighting standards take hold in the 2012-2014 timeframe, so will the ability to claim kWh savings from light bulbs installed during the 2009-2011 budget cycle. The DPS intends to review savings claims and technical assumptions in the 2008 Technical Advisory Group (TAG) process in an attempt to ensure accurate accounting that reflects current realities.

The continued success of existing programs will depend critically on these technical assumptions surrounding CFLs. While the changes that are taking place represent good news for consumers who can expect lower bills, they undermine the economics of continued investments in the technology at some point in the near future. As we indicated in our earlier comments, we believe that continued

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[7] In 2007, EVT estimates that that 48.3 GWhs of net savings from CFLs. (See, Table 3.1.17 at 56 of 2007 Preliminary Results and Savings Estimate Report.) Total estimated savings for 2007 is estimated at 96.3 GWhs. (See, Table 2.1.1. at 23 of 2007 Report.) The 2007 figure more than doubled the prior years (2005 and 2006) figure of roughly 22-23 GWhs of net savings attributable to CFLs. In 2008, CFL program sales appear poised to once again more than double 2007 savings claims associated with CFLs. The critical nature of this one product to EVT's and the EEU's overall savings levels and budgets cannot be overstated.

investments is warranted for one or two more years, but recommend that the Board require more careful scrutiny beyond 2010, if not before.

Third, the only possible basis for cost-effective investment in energy efficiency programs on a scale proposed by CLF and VPIRG would be through aggressive retrofit programs described in the 2006 GDS Analysis (See Appendix G-1). As the figures suggest, earlier savings can be achieved through retrofit activities, but at substantially higher costs, lower benefit/cost ratios, and lower sustained energy reductions over time (benchmarked to 2015 in the studies).[8] As the 2006 GDS analysis suggests, such accelerated investment can only be justified for a short period. We recommend, however, that the Board pursue a path that is more sustainable, achieves greater long term savings, and imposes less of a burden on ratepayers. The exception is in areas that merit targeted investments to help defer T&D investments. To the extent that the Board does choose to pursue a path of more aggressive retrofit programs, we encourage the Board to carefully consider the effective integration between electric programs and all-fuels program investments required under Act 92.

II. Detailed Responses to CLF and VPIRG June 4, 2008 Filing

A. Legal Requirements

The Department agrees that the Board must comply with 30 V.S.A. 209(d)(4) and 30 V.S.A. 218c, subject to compliance with other relevant statutory provisions. The Board has the responsibility and the obligation to consider what it views as reasonably available cost-effective energy efficiency programs sufficient to acquire the full amount of cost effective savings provided they do not conflict with competing requirements of 30 V.S.A. 209(e). The Board is not, however, obligated to make investments that defy a reasoned analytic and factual basis.

CLF and VPIRG point to a number of Board Orders, regional policy documents, and the Governor's Commission on Climate change in providing further foundation for electric energy efficiency program investments. The Department supports sound investments in energy efficiency programs consistent with these guidelines and directives. As the Board is aware, Vermont has the most aggressive programs and spending levels on energy efficiency on a per capita basis when compared to the top utility programs in the US and continues to expand the budgets for the efficiency utility. [9] The Department's recommendations are consistent with these policy directions. The guidance provided through these initiatives are best achieved through investments that are consistent with a sustainable spending pattern recommended in our earlier comments.

B. DPS Avoided Costs

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[8] GDS, Vermont Electric Energy Efficiency Potential Study, Appendix G. However, peak reductions are slightly improved under the GDS analysis.

[9] GDS 2007 Report at 16.

The Department agrees that avoided costs have increased since the Board's 2006 Order. Indeed, we have already acknowledged in our April 4 filing that the higher avoided costs will have the impact of screening in some additional measures. In isolation of other factors, this would warrant further investment. As noted above, however, the changes in the market for key efficient products together with changes in federal law will have a countervailing impact on reasonable levels of investment in energy efficiency.

The DPS takes issue with the list of additional factors included in the analysis of CLF and VPIRG. The GDS 2006 study applied an externality adjustment in the screening of programs in developing their estimates of cost-effective potential in 2006.[10] The Demand Response Implied Price Effect (DRIPE) measurement is not appropriate to the application of the societal test.[11] Siting issues are already implicit in the calculation of avoided costs through the market prices of capacity, and energy. The DPS analysis of avoided costs is based on national projections of fossil fuel prices and those estimates were further vetted through the Avoided Energy Supply Costs (AESC) process. While the Department acknowledges the risks of global fossil fuel shortages is a potential, our estimates of avoided costs simply reflect our best analysis at the time of the forecast; we plan to continue to update these estimates on a biennial basis to ensure a timely connection between fuel prices and efficiency program funding and investments.

The CLF and VPIRG comments also make many references to the average costs of energy efficiency. These figures are heavily influenced by the rapid expansion of inexpensive energy efficiency services resulting from the sale of CFLs. As noted above, given the growth in sales there is considerable concern that the technical assumptions feeding these calculations are lagging current market realities. Consequently we cannot assume that current costs of energy efficiency will remain at current levels. The evidence points to the contrary – costs of energy efficiency will likely rise in the near future. The Board should guard against the flawed logic of using recent year savings claims and costs as the basis for future budgets. The Board should instead rely on sound technical analysis from independent sources, such as the GDS estimates. And as VPIRG and CLF note in their comments, the issue is not one of average embedded costs of existing programs, but one of marginal costs of new measures and programs.

C. Rising Energy Costs

The Department updates it long range projections of energy costs every two years. In an era of rapid increases (or decreases) in prices, it is difficult to maintain comparability between current forecasts and existing market realities. However, we agree that the current market realities appear to favor higher

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[10] GDS, Vermont Electric Energy Efficiency Potential Study, page 14.

[11] The Demand Response Implied Price Effect reflects the reduction in the market clearing price to reductions, at the margin, in demand. It represents a transfer of revenues from sellers to buyers in the form of lower market clearing prices.

avoided costs than those that were adopted only 6 months ago by the Board. That said, the average life of energy efficiency program measures is 12 to 14 years. As such, the Board should maintain a long view of energy markets and focus on longer term market conditions. The Department plans to assist by maintaining a frequent schedule for updating avoided costs.

D. Increased Uncertainty of Future Energy Supplies

The Department disagrees with CLF and VPIRG's position that future energy supplies are uncertain. There may be uncertainty around one or both of our major sources or contracts, but that should not be confused with our ability to serve Vermont consumers electricity from other suppliers and the market generally.

E. Volatility of Electricity Costs

The Department agrees with CLF and VPIRG that future wholesale electricity prices are likely to be volatile. Energy efficiency is one of a number of strategies that can help reduce our exposure to that market volatility. Indeed, the screening of energy efficiency investments and programs under the Vermont application of the societal tests includes a 10% risk adjustment to favor energy efficiency programs. This adjustment was applied in the GDS analysis, but, as noted in the report, it had little impact on the measure and programs that successfully screened.[12]

F. Recent EEU Successes

The Department appreciates and supports the EEU in its successes since its inception, and especially over the past couple of years. The EEU appears to be doing an excellent job of managing the rapid expansion in program activities over a relatively short period of time. That said, the market for CFL bulbs is undergoing tremendous change and this single product accounts for roughly half of the savings claims in 2007, and seems likely to represent a much larger share in 2008. The changes taking place in this market are having a tremendous impact on the calculated savings and the Board needs to be guarded in how the accomplishments tied to the CFL markets translate into future budgets. Looking forward, future changes in lighting standards will significantly change the technical analysis and assumptions around future screening of CFLs. As a practical matter, one could even argue for a reduction in the budget based on this transformation. However, the Department believes that potential reductions in savings in the CFL markets can be offset by promotion of other existing measures and installation of new and evolving technologies.

G. Replies to CLF/VPIRG Responses to DPS Concerns

1) *Effect of Federal Legislation* -- CLF and VPIRG assert that there is still considerable room for cost-effective investment in CFLs prior to the federal standards taking hold in 2012. While this may be true, CLF and VPIRG fail to address the impacts that these standards will have on key

[12] GDS 2007 Electric Energy Efficiency Potential Study at 1.

technical parameters that should appropriately be applied in screening CFLs in 2009-2011. The pending nature of the federal standards will also likely have an impact on the market, manufacturing, and availability of the current generation of incandescent bulbs in advance of the standards taking hold. When combined with the evident market changes, the impacts on residential lighting savings will likely be significant, and potentially, dramatic.

2) *Updates to the Technical Reference Manual* -- While we acknowledge that over time, other technologies will likely move forward to create new opportunities for cost-effective program efficiency investments, the significance of this one technology in the EEU's current portfolio and the Board's timeframes for making the budget commitments over the coming 3 years simply do not justify the budgets proposed by VPIRG and CLF.

3) *Rapid compact fluorescent light market transformation* – While it is speculative at this point, the Department believes that in the next year, and maybe two years, that given the extremely cost-effective nature of the technology, it is unlikely that CFL's will be rendered uneconomic investments for continued program activity. Nevertheless, we believe there is a significant risk that CFLs will be rendered uneconomic due rapid acceptance of the technology by sellers and consumers alike sometime over this coming 3-year budget cycle.

4) *EEU stability in regards to keeping pace* – CLF and VPIRG allege that the Department proposes to "stifle" the EEU by not supporting rapid further expansion to the EEU budgets. The Department disagrees. The Department wants and expects the EEU to continue to provide sound investments and services in line with well reasoned budgets established through careful consideration of the facts. The Department would also like an opportunity to evaluate the performance of the EEU under this rapid expansion to ensure that the EEU is continuing to meet these high standards of performance amidst the rapid expansion that is taking place in 2008.[13]

5) *Effects of recent legislation* – The Department agrees that recent legislation does not change existing statutory requirements. However, the Board should consider the environment in which the services are being delivered. Recent legislative changes are among the many factors that could positively or negatively impact the ability of EVT to deliver electric efficiency program services. The Board should be mindful of the implications on the EEU in establishing budgets.

6) *Recent Vermont System Planning Committee Activities* – Again, the Board should be mindful of all relevant factors that could have an impact on the ability of the EEU to deliver service and meet its obligations.

[13] The Department is giving careful attention to the geo-targeting efforts of EVT over the coming months. In late 2008-early 2009, once enough time has elapsed to ensure sufficient data from geo-targeting efforts, the Department will lead a significant evaluation effort of geo-targeting programs and approach. Commercial and Residential evaluations, expected to be complete this summer, will give an accurate baseline of the building and equipment stock in geo-targeted areas, providing useful comparison points for analysis.

In conclusion, the Department applauds the continued success of Efficiency Vermont, and supports a sustained investment in order to continue to provide robust efficiency services to Vermont ratepayers consistent with our prior recommendations.

Very truly yours,

Walter S. Poor
Energy Programs Manager

Sarah Hofmann
Director for Public Advocacy

cc: EEU Service List Electronically
7081 Service List